CLAIMS

What is claimed is:

1. A method of using electromagnetic radiation to control exposure of media to electromagnetic radiation, the method comprising:

rotating the media;

sensing a frequency of electromagnetic radiation radiating from a rim of the media with a stationary detector; and

controlling, with the sensed frequency, exposure of the media to electromagnetic radiation with a movable source.

2. The method of claim 1 further including:

providing at least one reflective and one non-reflective region on the media, aligned circularly about the rim of the media,

emitting electromagnetic radiation onto the rim of the media as the media rotates, and

wherein the electromagnetic radiation radiated from the rim originated from the electromagnetic radiation source directed at the rim.

3. The method of claim 2 wherein providing the reflective and non-reflective regions includes providing the reflective and non-reflective regions in a spoke pattern on the media.

4. The method of claim 2 wherein providing the reflective and non-reflective regions includes providing the reflective and non-reflective regions in a gear-tooth pattern on the media.

5. The method of claim 2 wherein emitting the electromagnetic radiation onto the rim of the media includes emitting coherent electromagnetic radiation.

6. The method of claim 2 wherein emitting the electromagnetic radiation onto the rim of the media includes emitting non-coherent electromagnetic radiation.

7. The method of claim 1 wherein sensing the frequency of electromagnetic radiation radiating from the rim of the media includes sensing the frequency of electromagnetic radiation radiating from an inner rim of the media.

8. The method of claim 1 wherein sensing the frequency of electromagnetic radiation radiating from the rim of the media includes sensing the frequency of electromagnetic radiation radiating from an outer rim of the media.

9. The method of claim 1 wherein controlling the exposure of the media to electromagnetic radiation includes controlling the exposure of the media to coherent electromagnetic radiation.

10. The method of claim 1 wherein controlling the exposure of the media to electromagnetic radiation includes controlling the exposure of the media to non-coherent electromagnetic radiation.

11. The method of claim 1 wherein controlling exposure of the media to electromagnetic radiation includes controlling a placement of a beam of the electromagnetic radiation on the media.

12. The method of claim 1 wherein controlling exposure of the media to electromagnetic radiation includes controlling the rotation of the media.

13. A mass storage device comprising;

a rotation device configured to rotate mass storage media having a rim;

an electromagnetic radiation sensor configure to sense a frequency of electromagnetic radiation radiated from the rim of the media as the media rotates;

an electromagnetic radiation emitter; and

a controller, coupled to the electromagnetic radiation sensor, the controller configured to control, with a sensed frequency of electromagnetic radiation radiated from the rim, exposure of the media to electromagnetic radiation from the electromagnetic radiation emitter.

14. The mass storage device of claim 13 further including an electromagnetic radiation source directed at the rim, wherein at least one reflective and one non-reflective region are aligned circularly on the media about the rim, and wherein the electromagnetic radiation radiated from the rim originated from the electromagnetic radiation source directed at the rim.

15. The mass storage device of claim 14 wherein the sensor is disposed to sense electromagnetic radiation reflected from a spoke pattern on the media.

16. The mass storage device of claim 14 wherein the sensor is disposed to sense electromagnetic radiation reflected from a gear-tooth pattern on the media.

17. The mass storage device of claim 14 the electromagnetic radiation source includes a coherent electromagnetic radiation source.

18. The mass storage device of claim 14 the electromagnetic radiation source includes a non-coherent electromagnetic radiation source.

19. The mass storage device of claim 13 wherein the rotation device includes:

a spindle coupled to the media and

a motor coupled to the spindle.

20. The mass storage device of claim 13 wherein the controller includes a motor controller configured to control the motor.

21. The mass storage device of claim 13 wherein the sensor is disposed to sense electromagnetic radiation radiated from an inner rim of the media.

22. The mass storage device of claim 13 wherein the sensor is disposed to sense electromagnetic radiation radiated from an outer rim of the media.

23. The mass storage device of claim 13 the electromagnetic radiation emitter includes a coherent electromagnetic radiation emitter.

24. The mass storage device of claim 13 the electromagnetic radiation emitter includes a non-coherent electromagnetic radiation emitter.

25. The mass storage device of claim 13 wherein the controller includes radial positioner for controlling a placement of a beam of the electromagnetic radiation on the media.

26. A mass storage device having media that is rotateable, comprising;

means for sensing electromagnetic radiation with a stationary sensor from a rim of the media;

means for controlling the rotational speed of the media based on the sensed electromagnetic radiation;

means for positioning radially an electromagnetic source with respect to a surface of the media; and

means for controlling exposure of the media by the electromagnetic source in conjunction with the means for controlling and the means for positioning.

27. The mass storage device of claim 26 further including means for sourcing electromagnetic radiation directed at the rim, wherein at least one reflective and one non-reflective region are aligned circularly on the media about the rim, and wherein the electromagnetic radiation radiated from the rim originated from the electromagnetic radiation source directed at the rim.

28. The mass storage device of claim 27 wherein the means for sensing is disposed to sense electromagnetic radiation from a spoke pattern on the media.

29. The mass storage device of claim 27 wherein the means for sensing is disposed to sense electromagnetic radiation from a gear-tooth pattern on the media.

30. The mass storage device of claim 27 the means for sourcing electromagnetic radiation includes a coherent electromagnetic radiation source.

31. The mass storage device of claim 27 the means for sourcing electromagnetic radiation includes a non-coherent electromagnetic radiation source.

32. The mass storage device of claim 27 the means for sourcing electromagnetic radiation includes a coherent electromagnetic radiation emitter.

33. The mass storage device of claim 27 the means for sourcing electromagnetic radiation includes a non-coherent electromagnetic radiation emitter.

34. The mass storage device of claim 26 wherein the means for controlling the rotational speed includes:

a spindle coupled to the media and

a motor coupled to the spindle.

35. The mass storage device of claim 26 wherein the means for controlling rotational speed includes a motor controller configured to control the rotational speed of the media to 0.25 meters/second at an accuracy of 0.02 percent.

36. The mass storage device of claim 26 wherein the means for sensing is disposed to sense electromagnetic radiation radiated from an inner rim of the media.

37. The mass storage device of claim 26 wherein the means for sensing is disposed to sense electromagnetic radiation radiated from an outer rim of the media.

38. The mass storage device of claim 26 wherein the means for controlling includes placement means for controlling a placement of a beam of the electromagnetic radiation on the media.

39. A program storage system readable by a computer, tangibly embodying a program, applet, or instructions executable by the computer to perform method steps for using sensed electromagnetic radiation to control exposure of media to a first source of electromagnetic radiation, the media having at least one patterned region aligned circularly about a rim of the media, the method comprising:

rotating the media;

sensing a frequency of electromagnetic radiation from the at least one patterned region; and

controlling, with the sensed frequency, exposure of the media with the first source of electromagnetic radiation.

40. The program storage system of claim 39, further comprising emitting electromagnetic radiation to the patterned region using a second source of electromagnetic radiation.

41. The program storage system of claim 40 wherein emitting electromagnetic radiation using a second source includes emitting non-coherent electromagnetic radiation.

42. The program storage system of claim 39 wherein controlling the exposure of the media with the first source of electromagnetic radiation includes controlling the exposure of the media to coherent electromagnetic radiation.

43. The program storage system of claim 39 wherein controlling exposure of the media with the first source of electromagnetic radiation includes controlling a placement of a beam of the electromagnetic radiation on the media.

44. The program storage system of claim 39 wherein controlling exposure of the media with the first source of electromagnetic radiation includes

controlling the rotation of the media based on the sensed electromagnetic radiation form the rim.

45. The program storage system of claim 39 wherein controlling exposure of the media with the first source of electromagnetic radiation includes controlling the rotational speed of a spindle onto which the media is fixed based on the sensed frequency of electromagnetic radiation from the at least one patterned region.

46. The program storage system of claim 39 wherein controlling exposure of the media with the first source of electromagnetic radiation includes controlling the rotational accuracy of a spindle onto which the media is fixed to allow placement to within a quarter of a pixel at 600 dpi on the media.

47. An optical disc drive for replaceable media, comprising:

an optical encoder having a first photon source and a first photon sensor disposed at a stationary location within a rim area of the optical disc drive wherein the first photon source is configured to reflect photons from a pattern located in the rim area on a media disposed in the optical disc drive;

an optical pickup unit having a second photon source and a second photon sensor disposed on a movable positioning unit;

a motor unit having a spindle for placement of the media while in the optical disc drive to allow for rotation of the media;

a control circuit that uses the first photon sensor to detect the rotational speed of the media from the pattern and that adjusts power to the motor unit to maintain precise rotational speed and accuracy while controlling the exposure to the media with the second photon source.

48. The optical disc drive of claim 47 wherein the first photon source is a non-coherent source.

49. The optical disc drive of claim 47 wherein the rim area is located in the inner hub of the media near the spindle.

50. The optical disc drive of claim 47 wherein the accuracy is maintained by the control circuit to allow for placement of a pixel on the media to within ¼ of a pixel location at 600 dpi.